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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

PATTERSON, MARC A

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 11/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/462,179

Applicant(s)

PEDUTO ET AL.

Examiner

Marc A. Patterson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

WITHDRAWN REJECTIONS

1. The 35 U.S.C. 102(b) rejection of Claims 1 – 3 and 11 as being anticipated by Segal et al (U. S. Patent No. 3,920,879) in view of Amann et al (German Patent No. 1,595,496), of record on page 2 of the previous Action, is withdrawn.

NEW REJECTIONS

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 – 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Segal et al (U. S. Patent No. 3,920,879) in view of Amann et al (German Patent No. 1,595,496).

With regard to Claims 1 – 3 and 11, Segal et al disclose a composition comprising a thermoplastic polyamide (column 5, lines 31 – 33) and an impact resistance modifier (long fiber reinforcement providing improved impact resistance; column 7, lines 9 – 16) present at a concentration of 10% (column 7, line 63); the polyamide is a copolymer (column 6, line 1) of caprolactam (column 5, lines 59 – 60) and a lactam having 12 carbons (column 5, lines 50 – 59); the sheets comprising the composition are laminated to form a tri - layer laminate (column 12, lines 13 – 14) thus an internal layer between the two layers, which is also a middle layer, comprises the impact modifier and the outermost

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layers, which sandwich the middle layer, comprise the copolymer. Segal et al fail to disclose a copolymer comprising a ratio by weight of 4 of caprolactam to the lactam having 12 carbons.

Amann et al teach a copolymer comprising a ratio by weight of 4 of caprolactam to a lactam having 12 carbon atoms (copolymerization of 80% by weight caprolactam and 20 % by weight of a lactam having 12 carbon atoms; page 2, second paragraph, English translation) for the purpose of obtaining a copolymer that is processed in an especially simple manner (page 2, third paragraph, English translation). One of ordinary skill in the art would therefore have recognized the advantage of providing for the copolymer of Annan in Segal et al, which comprises a polyamide copolymer, depending on the desired processability of the end product.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for a copolymer comprising a ratio by weight of 4 of caprolactam to the lactam having 12 carbons in Segal et al in order to obtain a copolymer that is processed in an especially simple manner as taught by Amann et al.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 4 – 9, 19 – 21 and 23 – 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Segal (U.S. Patent No. 3,920,879) in view of Amann et al (German Patent No. 1,595,496) and further in view of Kerschbaumer (U.S. Patent No. 5,219,003).

Segal et al and Amann et al disclose a multilayer comprising polyamide and an impact modifier as discussed above. The structure is used in the making of automobile components (column 8, lines 39 - 40). With regard to Claims 4 and 20, Segal et al and Amann et al fail to disclose a pipe comprising the structure.

Kerschbaumer teach the use of a multilayer structure comprising polyamide, therefore having internal and external layers of polyamide (column 2, lines 48 - 50), in a pipe for automobiles (fuel line for motor vehicles; column 1, lines 48 - 50) for the purpose of obtaining a pipe that resists delamination (column 1, line 57). One of ordinary skill in the art would therefore have recognized the advantage of providing for the pipe of Kerschbaumer in Segal et al and Amann et al, which is a multilayer structure comprising polyamide, depending on the desired resistance to delamination of the end product.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for a pipe in Segal et al and Amann et al in order to obtain a pipe that resists delamination as taught by Kerschbaumer.

With regard to Claims 5 – 9, 21 and 23 – 25, Kerschbaumer teaches additional layers comprising the composition of the internal and external layers (it is equivalent for the structure to comprise three layers, or more than three layers; column 2, lines 63 - 67) and therefore teaches internal intermediate layers and external intermediates layer that are arranged alternately in the transverse direction of the structure and an intermediate layer being formed by the composition forming the internal layers.

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With regard to Claim 19, the composition comprising the internal layer taught by Kerschbaumer comprises a plasticizer (column 4, lines 43 - 44).

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Segal (U.S. Patent No. 3,920,879) in view of Amann et al (German Patent No. 1,595,496) and further in view of Yu (U.S. Patent No. 5,256,460).

Segal et al and Amann et al disclose a structure for automobile components comprising polyamide as discussed above. The polyamide is blended with another polyamide component (column 6, lines 1 - 2). Segal et al and Amann et al fail to disclose a component comprising nylon 6/6-36.

Yu teaches a structure for an automobile component (an automotive fuel hose; column 1, lines 11 - 15) comprising nylon 6/6-36 (copolymer of caprolactam and a mixture of hexamethylenediamine having a dicarboxylic acid having a carbon atom number of 36; column 1, lines 58 - 59) for the purpose of obtaining a structure having improved fuel resistance (column 1, lines 35 - 37). One of ordinary skill in the art would therefore have recognized the advantage of providing for the nylon 6/6-36 of Yu in Segal et al and Amann et al, which comprises a structure for an automobile component, depending on the desired resistance to fuel of the end product.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for nylon 6/6-36 in Segal et al and Amann et al in order to obtain a structure having improved fuel resistance as taught by Yu.

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7. Claims 12 and 14 - 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Segal et al (U.S. Patent No. 3,920,879) in view of Amann et al (German Patent No. 1,595,496) and Kerschbaumer (U.S. Patent No. 5,219,003) and further in view of Princiotta et al (European Patent No. 0646627).

Segal et al, Amann et al and Kerschbaumer disclose a multilayer polyamide tube comprising an impact modifier as discussed above. With regard to Claims 12 and 14 - 18, Segal et al, Amann et al and Kerschbaumer fail to disclose an impact modifier which has a glass transition temperature below 0 degrees Celsius, and comprises acid as a functional group, and has a modulus of less than 1500 MPa and a melt flow index of between 0.1 and 7 g/10 min measured at 190 degrees Celsius under a load of 2.16 kg and is an ultra low density polyethylene.

Princiotta et al. teach an acid - modified ultra low density polyethylene which has a glass transition temperature below 0 degrees Celsius, and comprises acid as a functional group, and has a modulus of less than 200 Mpa and a melt flow index of between 0.1 and 7 g/10 min measured at 190 degrees Celsius under a load of 2.16 kg which is used as an impact modifier of polyamide (page 2, lines 31 - 58) for the purpose of manufacturing a tube usable below a temperature of 40 degrees Celsius (page 2, lines 41 - 46). One of ordinary skill in the art would therefore have recognized the advantage of providing for the impact modifier of Princiotta et al in Segal et al, Amann et al and Kerschbaumer, which is a polyamide, depending on the desired usability at low temperature of the end product as taught by Princiotta et al.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for an acid - modified ultra low density

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polyethylene which has a glass transition temperature below 0 degrees Celsius, and comprises acid as a functional group, and has a modulus of less than 200 MPa and a melt flow index of between 0.1 and 7 g/10 min measured at 190 degrees Celsius under a load of 2.16 kg in Segal et al, Amann et al and Kerschbaumer in order to obtain a tube usable below a temperature of 40 degrees Celsius as taught by Princiotta et al.

8. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Segal et al (U.S. Patent No. 3,920,879) in view of Amann et al (German Patent No. 1,595,496) and Kerschbaumer (U.S. Patent No. 5,219,003) and further in view of VanBuskirk et al (U.S. Patent No. 5,357,030).

Segal et al, Amann et al and Kerschbaumer disclose a three - layered tube comprising a polyamide 6 layer as discussed above. Segal et al, Amann et al and Kerschbaumer fail to disclose a polyamide 6 layer which comprises a chain extender which is present at a concentration of 0.05% and 5% by weight of the layer.

VanBuskirk et al teach the addition of a chain extender to polyamide 6 for the purpose of improving the physical characteristics of the polyamide 6 (column 1, lines 38 – 59; column 2, lines 58 - 68). One of ordinary skill in the art would therefore have recognized the advantage of providing for the chain extender of VanBuskirk et al in Segal et al, Amann et al and Kerschbaumer, which is comprises polyamide 6, depending on the desired physical characteristics of the end product as taught by VanBuskirk et al.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for the addition of a chain extender to polyamide 6 in Segal et al, Amann et al and Kerschbaumer in order to improve the

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physical characteristics of the polyamide 6 in the making of extruded products as taught by VanBuskirk et al.

9. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Segal et al (U.S. Patent No. 3,920,879) in view of Amann et al (German Patent No. 1,595,496) and Kerschbaumer (U.S. Patent No. 5,219,003) and further in view of Yu (U.S. Patent No. 5,256,460).

Segal et al, Amann et al and Kerschbaumer disclose a fuel hose comprising polyamide as discussed above. Segal et al, Amann et al and Kerschbaumer fail to disclose a component comprising nylon 6/6-36.

Yu teaches a fuel hose (an automotive fuel hose; column 1, lines 11 - 15) comprising nylon 6/6-36 (copolymer of caprolactam and a mixture of hexamethylenediamine having a dicarboxylic acid having a carbon atom number of 36; column 1, lines 58 - 59) for the purpose of obtaining a structure having improved fuel resistance (column 1, lines 35 - 37). One of ordinary skill in the art would therefore have recognized the advantage of providing for the nylon 6/6-36 of Yu in Segal et al, Amann et al and Kerschbaumer, which comprises a structure for an automobile component, depending on the desired resistance to fuel of the end product.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for nylon 6/6-36 in Segal et al, Amann et al and Kerschbaumer in order to obtain a structure having improved fuel resistance as taught by Yu.

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10. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over 35 U.S.C. 103(a) as being unpatentable over Segal et al (U.S. Patent No. 3,920,879) in view of Amann et al (German Patent No. 1,595,496) and further in view of Kitami et al (U.S. Patent No. 4,881,576).

Segal et al and Amman discloses a structure for automobile components comprising polyamide as discussed above. Segal et al and Amman fail to disclose a polyamide having a stress cracking resistance of greater than 500 hours as measured in zinc chloride.

Kitami et al teaches a gasoline hose (therefore an automobile component; column 1, lines 11 - 15) having a stress cracking resistance of greater than 500 hours (30 days; Table 1) as measured in zinc chloride (column 3, lines 30 - 34) for the purpose of obtaining a structure having excellent mechanical strength (column 1, lines 40 - 41). One of ordinary skill in the art would therefore have recognized the advantage of providing for the stress cracking resistance of Kitami et al in Segal et al and Amman, which comprises a structure for an automobile component, depending on the desired mechanical strength of the end product.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for a stress cracking resistance of greater than 500 hours as measured in zinc chloride in Segal et al and Amman in order to obtain a structure having improved fuel resistance as taught by Kitami et al.

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ANSWERS TO APPLICANT'S ARGUMENTS

11. Applicant's arguments regarding the 35 U.S.C. 102(b) rejection of Claims 1 – 3 and 11 as being anticipated by Segal et al (U. S. Patent No. 3,920,879), of record in the previous Applicant's arguments, have been considered and have been found to be persuasive. The rejection has therefore been withdrawn. The new rejections above are directed to Claims 1 – 26.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc A Patterson whose telephone number is 571-272-1497. The examiner can normally be reached on Mon - Fri 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marc Patterson 10/21/05

Marc A. Patterson, PhD.
Examiner
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